

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Schneider, et al.  
Serial No. : 10/553,382 – Conf. #3662  
Filed : October 19, 2005  
For : METHOD FOR COATING METAL BODIES WITH A PHOSPHATING  
Art Unit : 1793  
Examiner : Lois L. Zheng

August 7, 2009

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

I hereby certify that this correspondence is being filed electronically addressed to Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:	
James Crawford 	Signature
8/7/09 Date	

AMENDMENT UNDER RULE 111

Sir:

Responsive to the office action mailed May 8, 2009, please amend the above-identified patent application as follows:

36. (previously presented) A process according to claim 35, wherein the composition comprises not more than 1 g/l of nitrate.

37. (previously presented) A process according to claim 35, wherein the composition comprises not more than 0.5 g/l of nitrite.

38. (currently amended) A process according to claim 35, wherein the composition comprises at least one of a complex fluoride or or/and fluoride ions to magnesium ions ~~in a ratio of (MeF<sub>4</sub>, MeF<sub>6</sub> or/and F) : Mg in the a range from 0.1 : 1 to 10 : 1.~~

39. (currently amended) A process according to claim 35, wherein the composition comprises at least one of a complex fluoride or or/and fluoride ions to calcium ions in a ~~ratio of (MeF<sub>4</sub>, MeF<sub>6</sub> or/and F) : Ca in the range from 0.1 : 1 to 10 : 1.~~

40. (previously presented) A process according to claim 35, wherein the composition further comprises up to 2 g/l nickel ions.

41. (previously presented) A process according to claim 35, wherein the composition comprises chloride ions in the range up to 5 g/l.

42. (previously presented) A process according to claim 35, wherein the composition further comprises up to 2 g/l sulfate ions.

50. (previously presented) A process according to claim 35, wherein after the formation of the phosphate layer at least one layer comprising lubricant is applied.

51. (previously presented) A process for coating surfaces of metallic objects with a phosphating solution to form a coated metal, wherein the ratio of the pickling erosion on the metallic surface, measured in g/m<sup>2</sup>, to the layer weight of the phosphate layer, measured in g/m<sup>2</sup>, lies at values below 75% and wherein the ratio of free acid to total acid of said solution is from 0.25:1 to 0.11 to 1, and coldforming the coated metal.

52. (currently amended) An aqueous phosphating solution comprising:

8 to 100 g/l of phosphate, calculated as PO<sub>4</sub>,

0.5 to 60 g/l of zinc ions,

0 to 10 g/l of manganese ions,

0 to 16 g/l of calcium ions,

0 to 10 g/l of magnesium ions,

wherein at least 0.1 g/l of at least one of calcium or magnesium ions are present,

0.05 to 10 g/l of nitroguanidine,

0 to 2 g/l of nitrate,

0.1 to 10 g/l in total of chlorate or/and peroxide ions,

in total 0 to 16 g/l of complex fluoride of the formula MeF<sub>4</sub>, MeF<sub>6</sub>, or both,

wherein Me is selected from the group consisting of Si, Ti, Hf and Zr,

0 to 5 g/l of fluoride ions,

wherein the total content of complex fluoride and fluoride ions is in the range from 0.1 to 18 g/l and wherein the ratio of free acid to total acid is from 0.25:1 to 0.11 to 1, and coldforming the coated metal.

55. (currently amended) A process comprising coating a surface of a metallic object with an aqueous, acidic composition to form a coated metal, wherein the aqueous, acidic composition consists of:

8 to 50 g/l of phosphate, calculated as PO<sub>4</sub>,

0.5 to 30 g/l of zinc ions,

0 to 5 g/l of manganese ions,

0 to 8 g/l of calcium ions,

0 to 5 g/l of magnesium ions,

wherein at least 0.1 g/l of at least one of calcium or and magnesium ions are present,

0.1 to 5 g/l of nitroguanidine,

0.1 to 10 g/l in total of at least one of chlorate or and peroxide ions,

in total 0 to 16 g/l of complex fluoride of the formula MeF<sub>4</sub>, MeF<sub>6</sub>, or both, wherein Me is selected from the group consisting of Si, Ti, Hf and Zr,

0 to 5 g/l of fluoride ions,

wherein the total content of complex fluoride and fluoride ions is in the range from 0.1 to 18 g/l and wherein the ratio of free acid to total acid is from 0.25:1 to 0.11 to 1.

0 to 16 g/l of calcium ions,

0 to 10 g/l of magnesium ions,

wherein at least 0.1 g/l of at least one of calcium or or/and magnesium ions are present,

0.05 to 10 g/l of nitroguanidine,

0 to 2 g/l of nitrate,

0.1 to 10 g/l in total of chlorate or peroxide ions, or both;

in total 0 to 16 g/l of complex fluoride of the formula  $\text{MeF}_4$ ,  $\text{MeF}_6$ , or both, wherein Me is selected from the group consisting of Si, Ti, Hf and Zr,

0 to 5 g/l of fluoride ions,

wherein the total content of complex fluoride and fluoride ions is in the range from 0.1 to 18 g/l and wherein the ratio of free acid to total acid is from 0.25:1 to 0.11 to 1.

58. (new) The aqueous phosphating solution of claim 56, wherein the solution is free of cobalt.

59. (new) The aqueous phosphating solution of claim 56, wherein the solution is substantially free of cobalt.

60. (new) The aqueous phosphating solution of claim 35, wherein the solution is free of cobalt.

61. (new) The aqueous phosphating solution of claim 35, wherein the solution is substantially free of cobalt.

62. (new) The process of claim 51, wherein the solution is free of cobalt.

63. (new) The process of claim 51, wherein the solution is substantially free of cobalt.